westerly maxima were 86 and these were distributed as follows:

Length in months.	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Frequency.	3	3	1	7	8	8	11	13	7	3	5	4	6	1	2	2	2

There is in the above tabulation a well-marked crest at 11 to 12 months and a secondary crest at 15 to 17 months. The author believes the minimum at 14 months may have been accidental.

After eliminating the annual variation, a tendency for easterly or westerly maxima to recur at the same season in successive years is found. Thus from 1873 to 1883 the chief easterly maxima fell mainly between August and December and the westerly maxima between January and April and the same applies to the years 1889–1896, although the cycle in those years was not well pronounced. On the other hand, easterly maxima generally occurred in the early months and the westerly maxima in the later months from 1884 to 1888, 1897 to 1902, and 1910 to 1916.

Thus there seems to have been a more or less regular recurrence of the same phase of the cycle at about the same time in successive years, alternating with almost complete reversals.

The author suggests some form of seasonal control to account for this.

Earlier investigators of the subject, Meinardus [1] and Petersen,[2] developed the hypothesis of a "self-regulating mechanism" which depends for its operation upon the influence of the wind upon the flow of the warm Gulf Stream waters on the one hand and the cold waters of the Labrador Current on the other.

The time relation is too indefinite and the length of the period required to complete the cycle too variable for use in forecasting.—*A. J. H.*

[1] Meinardus, W.: Der Zusammenhang des Winterklimas im Mittel und Nordwest Europas mit dem Golfström. *Zs. Ges. Erdkunde*, Berlin, 1898, p. 95.
[2] Petersen, J.: Unperiodische Temperaturschwankung im Golfström und deren Beziehung zu der Luftdruckverteilung. *Ann. Hydrog.*, Berlin, 174*, 1910, p. 397.

ON THE FORMATION OF LOCAL DEPRESSIONS IN THE MEDITERRANEAN.

By E. G. MARIOLOPOULOS.

[Abstracted from *Comptes Rendus*, (Paris Acad.), October 1, 1923, pp. 597–600.]

Two types of barometric depression are distinguished in the Mediterranean region, those which are formed locally and those which are related to "families" of moving cyclones of the Northern Hemisphere. The first are usually of slight intensity and move very slowly, while the second type are usually intense and definitely related to the barometric activity over the Atlantic. The local depressions of the Mediterranean region show a line of temperature discontinuity in accordance with the Bjerknesian scheme of cyclonic structure. Temperatures in the cold portion are not uniform, but in the warm portion they are remarkably uniform. The author believes that actual "polar" and "equatorial" air are not essential to cyclonic formation, but that sufficient temperature inequality in opposing air currents can be produced by two adjacent anticyclones, in which case a depression is produced between them. The strong winter anticyclones of Asia and of the Atlantic provide opposing winds of contrasting temperature, which appear to cause the local depressions between them. In summer, when these anticyclones are not so strong and are differently located, such depressions do not form.—*C. L. M.*

BIBLIOGRAPHY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Meteorologist in Charge of Library.

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorogical work and studies:

Aitken, R. D.
Effect of slope exposure upon the climate and vegetation of a hill near Maritzburg: a preliminary investigation. p. 207–217. fig. 24½ cm. (Exc: South African journ. sci. v. 19, Dec., 1922.)

Baldit, Albert.
Sur un cas particulier d'orages par vent de sud dans le sud de la France (29–30 octobre. 1922.) Étude de météorologie régionale. Le-Puy-en-Velay. 1923. 87 p. figs. 25½ cm.

Bates, D. C.
Weather research on the Kermadec Islands. Wellington. 1922. p. 265–274. illus. charts. 25 cm. (Repr. New Zealand journ. sci. & tech. v. 5, no. 5, 1922.)

Bernard, Augustin.
Le régime des pluies au Maroc. Contribution préliminaire a l'étude de la pluviométrie du Maroc. Rabat. 1921. ii, 95 p. plates. 25 cm. (Mém. soc. sci. nat du Maroc. T. 1, no. 1, Jan. 1, 1921.)

[California. Highway commission, & U. S. Bureau of public roads.]
Report of highway research at Pittsburg, Calif., 1921 and 1922. Sacramento. 1923. 146 p. illus. plates. 27 cm. [Includes discussion of effects of temperature on concrete pavement.]

Cluver, Eustace H.
Influence of the cooling power of the atmosphere on the rate of growth of young animals. p. 236–240. 24½ cm. (Exc: South African journ. sci. v. 19, Dec., 1922.)

Cox, Henry Joseph.
Thermal belts and fruit growing in North Carolina. Washington. 1923. v, 106 p. plates. maps. diagrs. 31 cm. (Monthly weather review. Suppl. no. 19.)

Defant, Albert & Obst, Erich.
Lufthülle und Klima. Leipzig. 1923. viii, 186 p. figs. 26 cm. (Enzyklopädie der Erdkunde.)

Everdingen, [E.] van.
Uitreiking van de Buys-Ballot-medaille aan Sir Napier Shaw op 26 Mei 1923. 7 p. 24 cm. (Repr. Physica. 3e jaargang. 1923.)

Febrer, Joaquim.
Pluges a Catalunya durant l'hivern de 1921–1923. Barcelona. 1922–23. illus. (Servei meteorolôgic de Catalunya. Notes d'estudi. no. 8, 23.)

Frankenfield, Harry Crawford.
Spring floods of 1922. Washington. 1923. v, 29 p. plates. map 31 cm. (Monthly weather review. Supplement no. 22.)

Gamba, Pericle.
Le caratteristiche dell'atmosfera libera sulla Valle Padana. Risultati dei sondaggi compiuti nel R. Osservatorio geofisico di Pavia nel quindicennio 1906–1920. Venezia. 1923. 36 p. figs. 34½ cm.

Gerhardt, W. F.
The de Bothezat barograph, type "A." Washington. 1923. 11 p. illus. 28½ cm. (Air service inform. circ. v. 5, May 1, 1923.)

Great Britain. Meteorological office.
Book of normals of meteorological elements for the British Isles for periods ending 1915. Sect. IVa. Range of variation of temperature and rainfall. Sect. IVb. Frequency tables for hail, thunder, snow, snow lying, and ground frost. London. 1923. p. 153–220. 24½ cm.